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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,193	09/18/2003	Koji Tojo	F-7841	5575
28107	7590	04/25/2006	EXAMINER	
JORDAN AND HAMBURG LLP 122 EAST 42ND STREET SUITE 4000 NEW YORK, NY 10168			GOLUB, MARCIA A	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 04/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/665,193

Applicant(s)

TOJO, KOJI

Examiner

Marcia A. Golub

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) 1-6, 10 and 13 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 7-9, 11 and 12 is/are rejected.  
7) ☐ Claim(s) 11 and 12 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of **Fig 7 and claims 7-9, 11 and 12** in the reply filed on 4/3/2006 is acknowledged. The traversal is on the ground(s) that it would be more burden on the office to search the divisional application, if such an application is filed. This is not found persuasive because it is less burden on the examiner to search only one invention.

The requirement is still deemed proper and is therefore made FINAL.

### ***Response to Arguments***

Applicant's arguments filed 2/17/2006 have been fully considered but they are not persuasive.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine comes from Pan et al. which teaches the use of a tunable Bragg grating to produce stable output in a wide range of temperatures.

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In response to applicant's argument that "there is nothing to suggest that using the expandable means would successfully compensate for frequency range", the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

### ***Claim Objections***

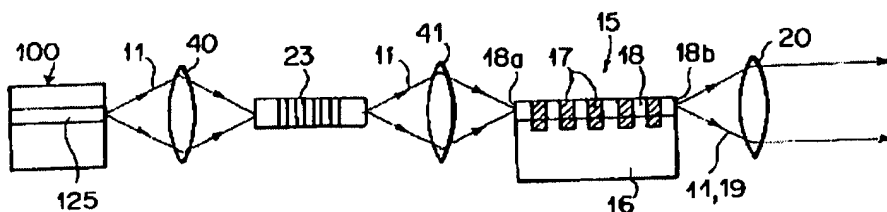
**Claims 11 and 12** are objected to because of the following informalities: These claims depend on claims 9 or 10, however claim 10 has been withdrawn, therefore claims 11 and 12 should depend on claim 9 only. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 7, 8, 9, 11, 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa (U.S. Pub. 2002/0009102) and further in view of Pan et al. (U.S. Pat. 6,181,851).



Regarding **claim 7**, Fig 24 of Hayakawa discloses "A wavelength conversion laser apparatus comprising:

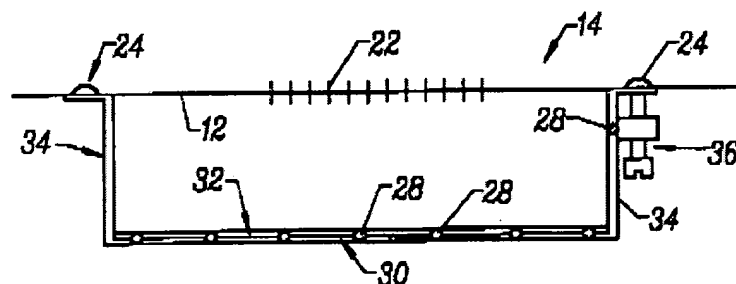
a semiconductor light emitting device [100],

an optical fiber having a tunable Bragg grating [23] provided therein and a fiber input end and output end;

optical resonator formed of the semiconductor light emitting device [100] arranged to input light [11] into said optical fiber [23] and receive reflected light from said optical fiber to effect a resonance at a resonance wavelength determined by a grating wavelength of said Bragg grating, said optical resonator providing optical resonator output light as a said resonance wavelength at an output end of said optical fiber; (paragraph 0196)

a wavelength conversion device [15] formed of nonlinear optical crystal MgO doped lithium niobate [ $\text{LiNbO}_3$  doped with MgO] (paragraph 0117), and having a wavelength range for input light ranging from 900 nm to 1100 nm [946 nm] (paragraph 0115), said wavelength conversion device [15] receiving as the input light said optical resonator output light [11] from said optical resonator and releasing a harmonic of the input light [19] ( $2^{\text{nd}}$  harmonic, paragraph 197).

Hayakawa does not disclose "a resonant wavelength adjusting means for adjusting the resonance wavelength of the optical resonator output light in accordance with temperature so as to maintain the harmonic of the light from the wavelength conversion device substantially constant regardless of a change in the temperature of the wavelength conversion device by substantially matching a temperature induced shift of said wavelength range for input light of said wavelength conversion device."



However, Fig 2A of Pan discloses a tunable Bragg grating that adjusts the wavelength of the output light by changing the length of the fiber Bragg grating to account for temperature variations. (Fig 10, 2/60-3/3)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Pan into the device of Hayakawa by substituting the fiber Bragg grating with a tunable fiber Bragg grating for at least the purpose of making the laser apparatus with a substantially constant output under varying temperature conditions.

Regarding **claims 8 and 9**, Hayakawa and Pan disclose a wavelength conversion laser apparatus as described above,

8. "wherein the resonant wavelength adjusting means is a grating expanding means [30,32] which is heat sensitive for expanding the tunable Bragg grating in a lengthwise direction of the tunable Bragg grating." (Fig 2a)

9. "wherein the grating expanding means comprises a bar-like heat-sensitive expandable member [30, 32] for securing the optical fiber [12] at two locations [34] between which the grating [22] is installed,

Regarding **claims 11 and 12**, Hayakawa and Pan, disclose a wavelength conversion laser apparatus as described above, but they do not specify that "the heat-sensitive expandable member is made of a plastic material or has a linear expansion coefficient of  $5 \cdot 10^{-5} (K^{-1}) - 6 \cdot 10^{-5} (K^{-1})$ ."

However, Pan discloses the same analysis (5/63-6/30) as the one used by applicant to arrive at the desirable coefficient of expansion of the heat sensitive expandable member. Substituting the known values (inherent to the elements used in the apparatus) into the known formula to obtain the coefficient of expansion needed for a particular apparatus and then selecting the element with specified coefficient of expansion from a known list of elements is as inventive as putting the last piece into a puzzle. (see *MPEP 2144.07*)

It would have been obvious to one of ordinary skill in the art at the time the of the invention to make the laser apparatus of these known materials/elements, since it has been held to be within the general skill of a worker in the art to select a known material/element on the basis of it's suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Contact Info***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcia A. Golub whose telephone number is 571-272-8602. The examiner can normally be reached on M-F 9-6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MAG